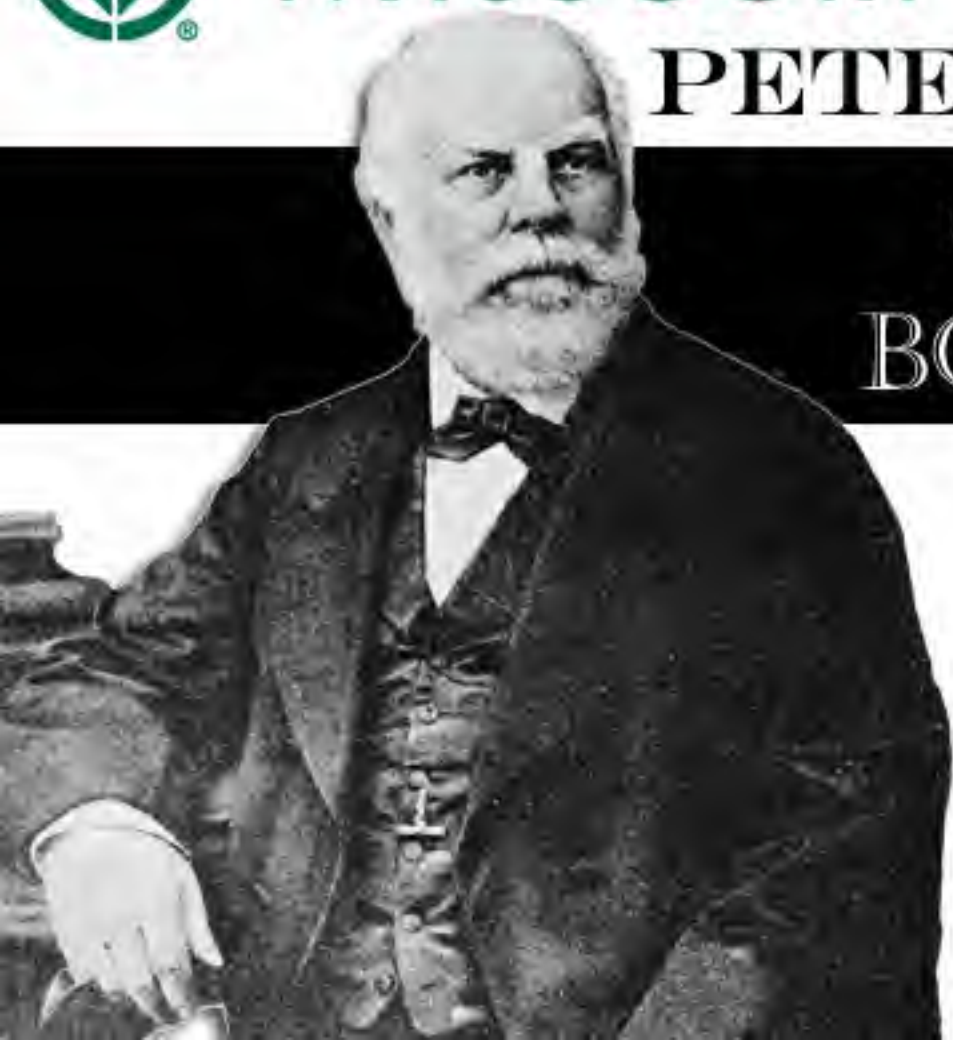


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BOTANICAL NOTEBOOKS



*Pagination Note:*

*Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.*



*Picea excelsa* fresh  
Washington Nursery, R. Douglas

Oct 2 1878

9 Cotyledons

x 30  
protruded  
but not  
aristate

x 30



section of cotyledons

top view

x 30



side of leaf

sides

7-9 Cotyl

leaf of  
young seedling

upper end of  
leaf spring on sides also;  
lower part entire



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*Picea nigra* soaked  
White Mountains Sept 14 1856

Oct 3 1878

2 specimens each with  
6 Cotyledons

x30



seed of Cotyl

Cotyledons 6  
always entire



young leaf

leaves all  
entire

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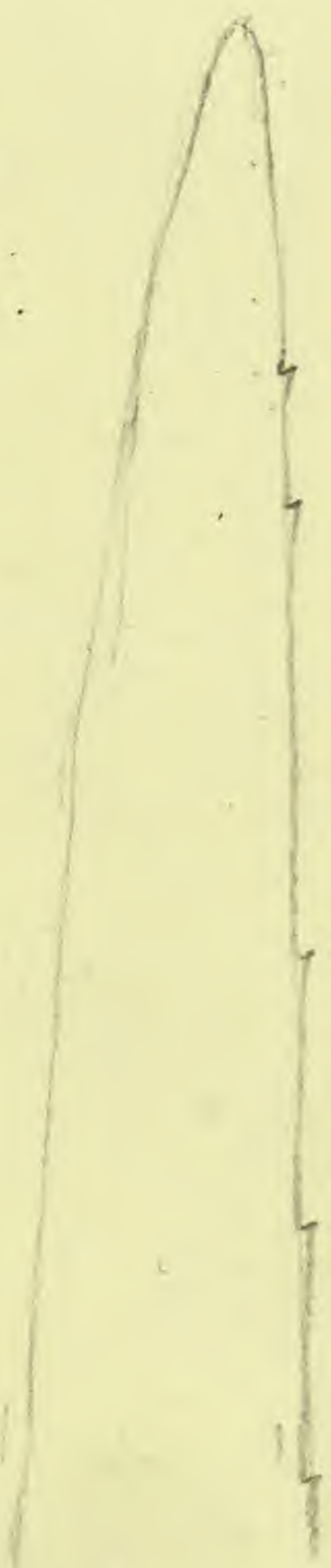
*Picea alba*  
waukegan nurseries, fresh

Octob 2 1878

specimens with

6	styl	3 -
7	-	2 -
		6 sp

x 30

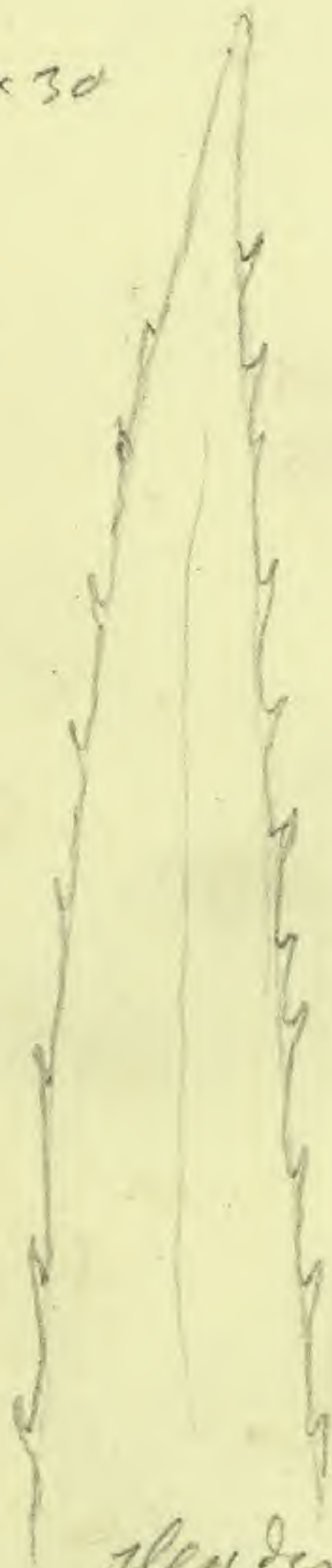


cotyledons very slender  
with short teeth or carina.

x 30



cotyl  
sect



slender  
very spring leaf

x 30



leaf sect  
sometimes a dust seen

Diagnosis

6 sp

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6+1 44  
7 44



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*Picea obovata*

Octob 2 1878

Schrenkiana

wankagan nurseries, fresh

Specimen with

6.	Cotyled	1
7		2
8		4
9		2
		9 3/4

x 30



sect. of Cotyled



Cotyledon  
teeth smaller than in  
the other toothed species

A recurved  
cotyledon  
so that teeth appear

dorsal or on outer curvature

very young leaf  
(will stretch more)

6	
7	1
8	1 1 1
9	1



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cm

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*Picea Marziana* - pungens

Oct 6 1 1878

Coloradoensis

Wankarem nurseries

leaf of seedling  
3 months old

section of leaf

fresh

X 30



Dentation of leaf on  
all 4 edges



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*Picea Engelmanni*

July 20 1878

fruits

Gray's Peak, Colorado

Seedlings raised by  
R. Douglas, Wenatchee, Ill



x 30

sect of Cotyledons

first young leaves flat  
not over approaching  
to square



Carina  
smooth  
edged

young leaf

x 30



sect of one of the  
first leaves  
of a seedling

5 Cotyl = 18 plants

6 - 22 -

7 - 4 -

44 -

about 2 rows of stamens  
on each of the 4 sides



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*Picea Sitchensis*

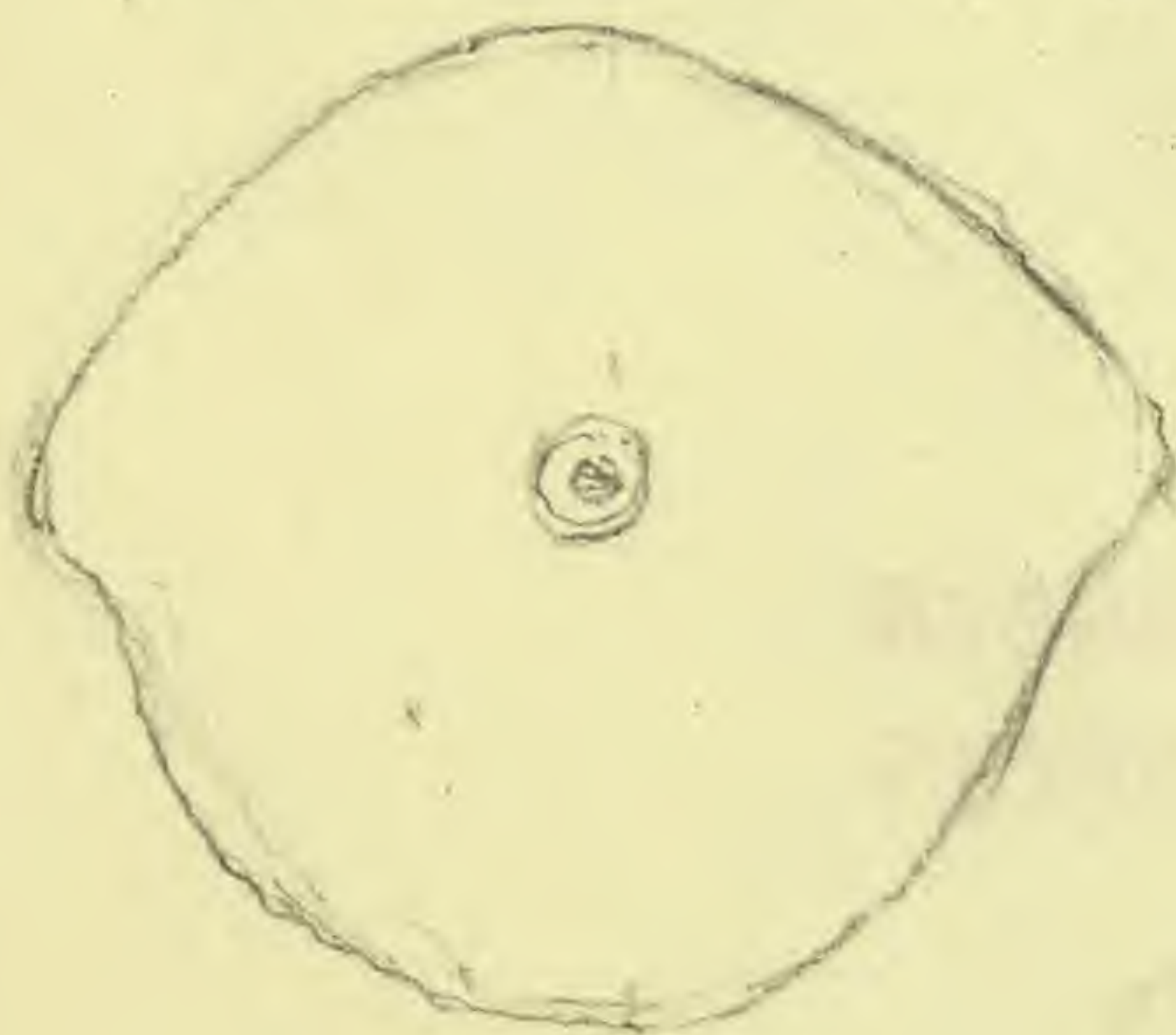
Apr 13 1879

Cult in Mission Bot Garden ex same Califa

x60

Section of young leaves of 8 months old plant, seedlings  
of this season

x30

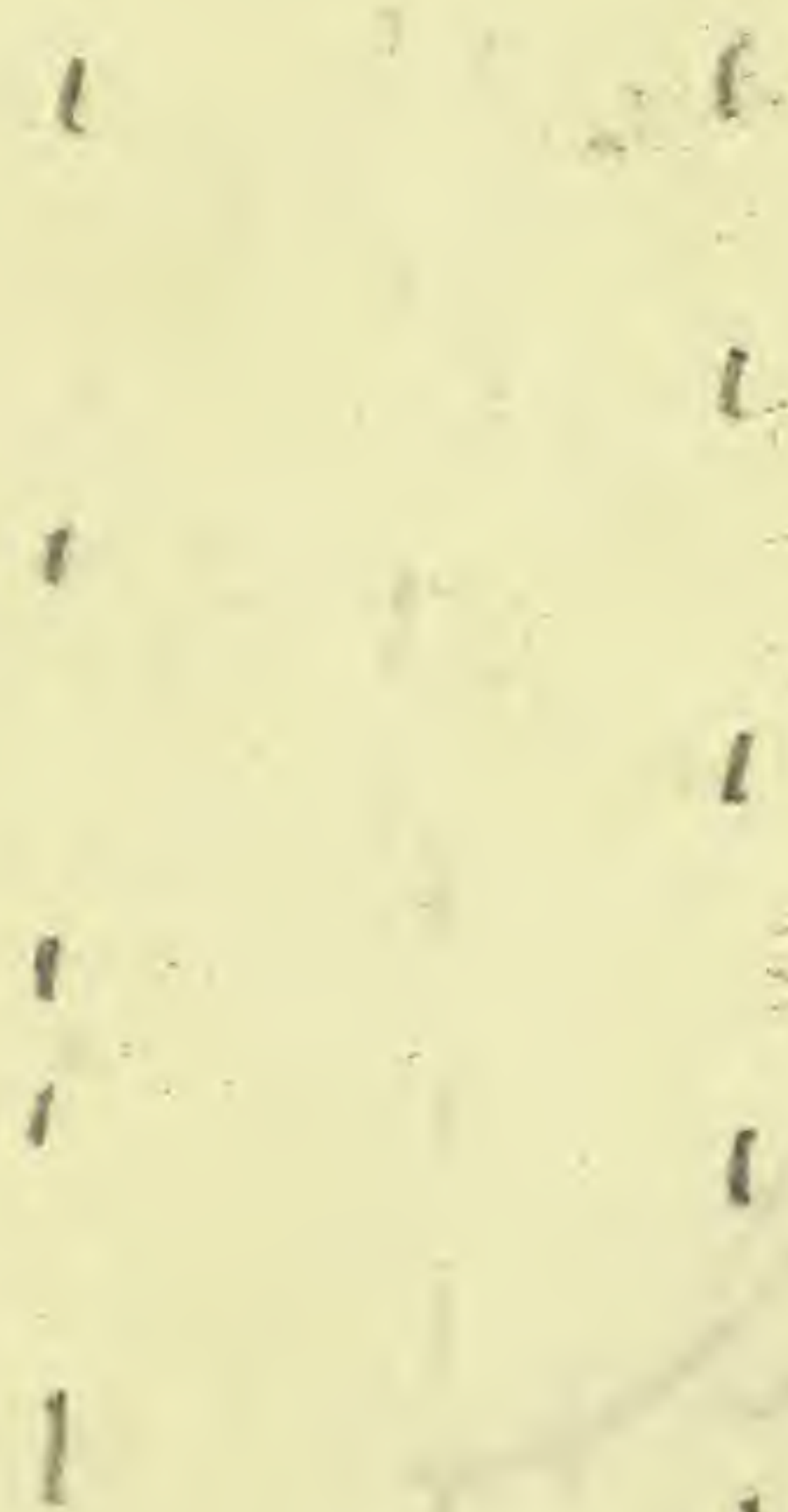
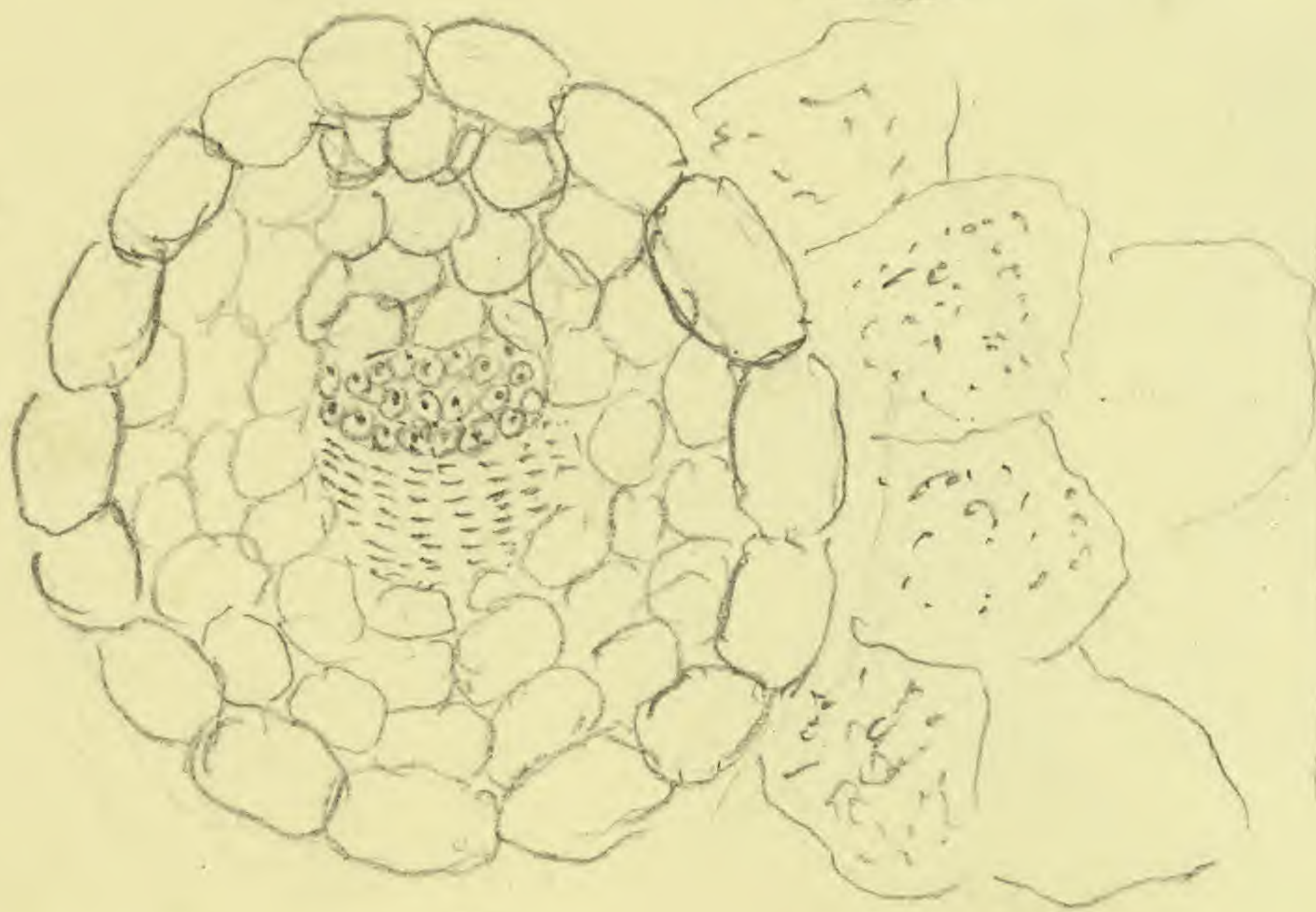


x60



upper side

x280



under side  
sometimes no stomata

x60



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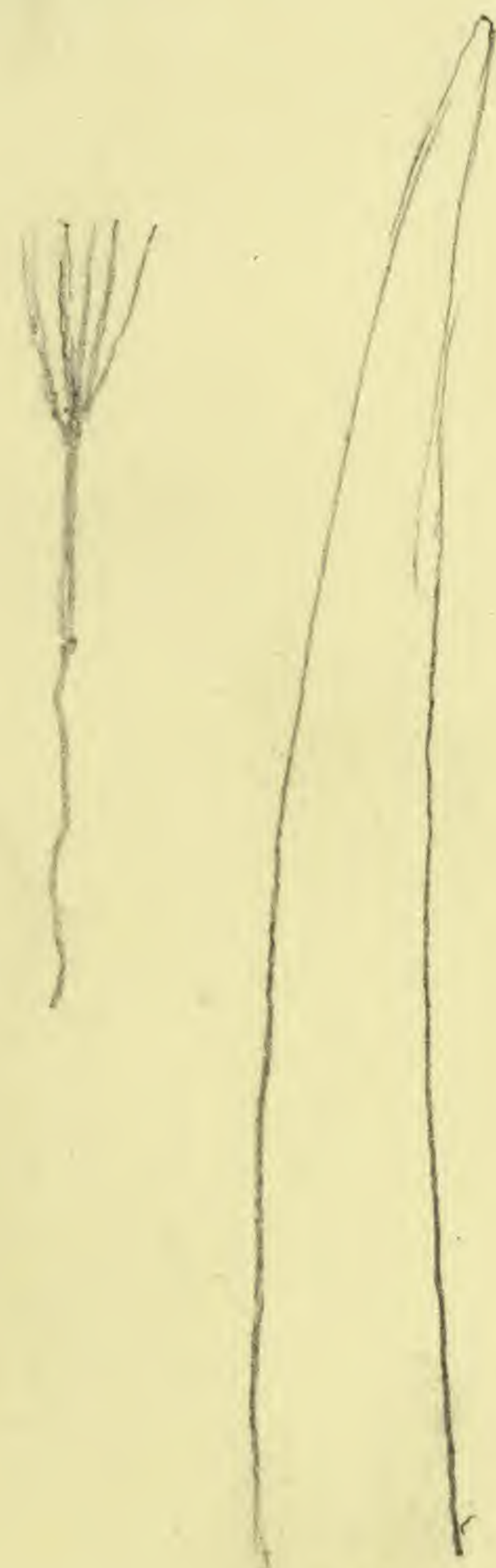


*Picea Sitchensis*

April 29 1879

from seeds from California, very young plantlet, cotyledons  
only, and small, 4.5 to 6 -

R. Syme, sent by Hooker



x 30



common



more  
frequent



rare

x 30

Keel entire  
not denticulate

Sections of  
Cotyledons.



x 30

fresh  
cotyledon of a plantlet  
raised by me  
from California seed  
June 9 1879  
4 Cotyledons



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32251

*Picea Sitchouensis*

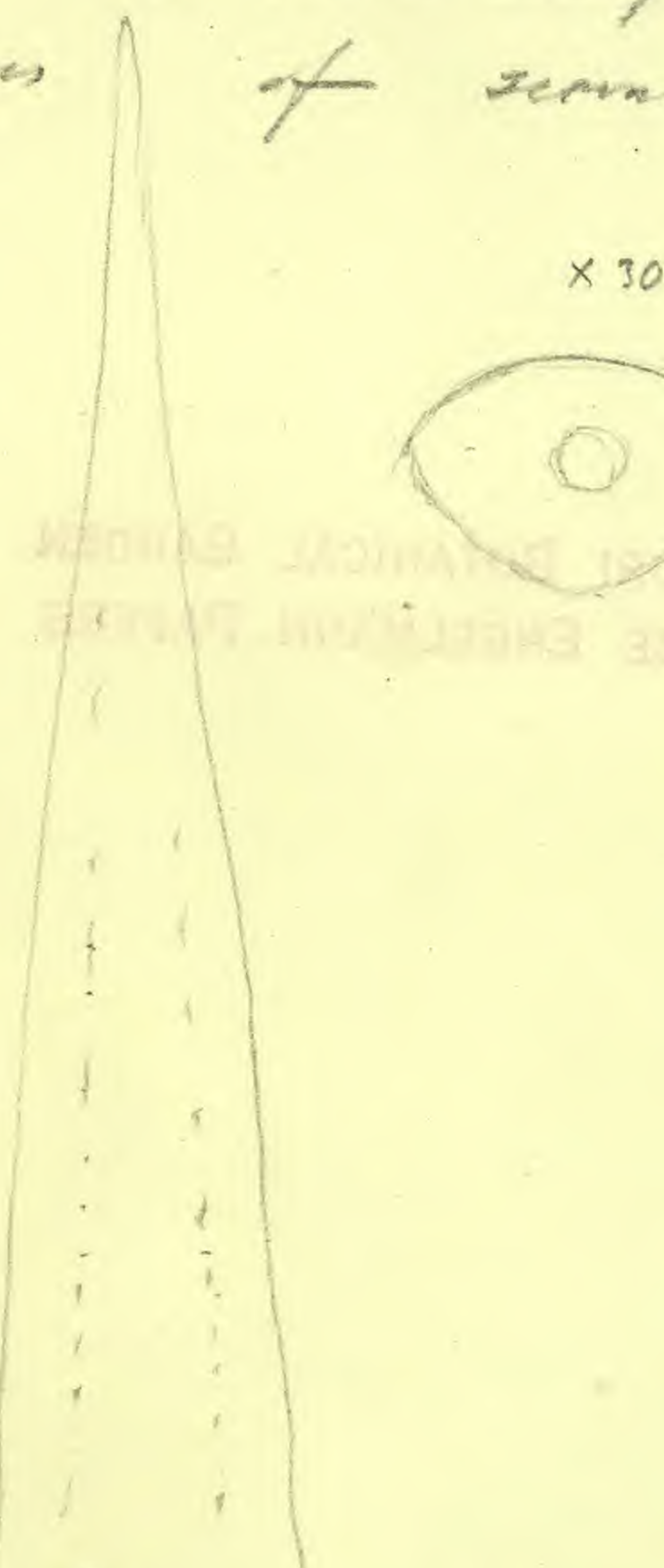
May 4 1880

ex sem Calif 1879

leaves

of second year growth

Hol Mission



upper side convex  
with rows of  
stomata  
lower side keeled  
with 1 row incom-  
plete, on each side

upper side lower  
5-6 lines scarcely 2 lines of stomata



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*Abies Menziesii* *parvifolia*  
*coloradensis*

July 20 1878

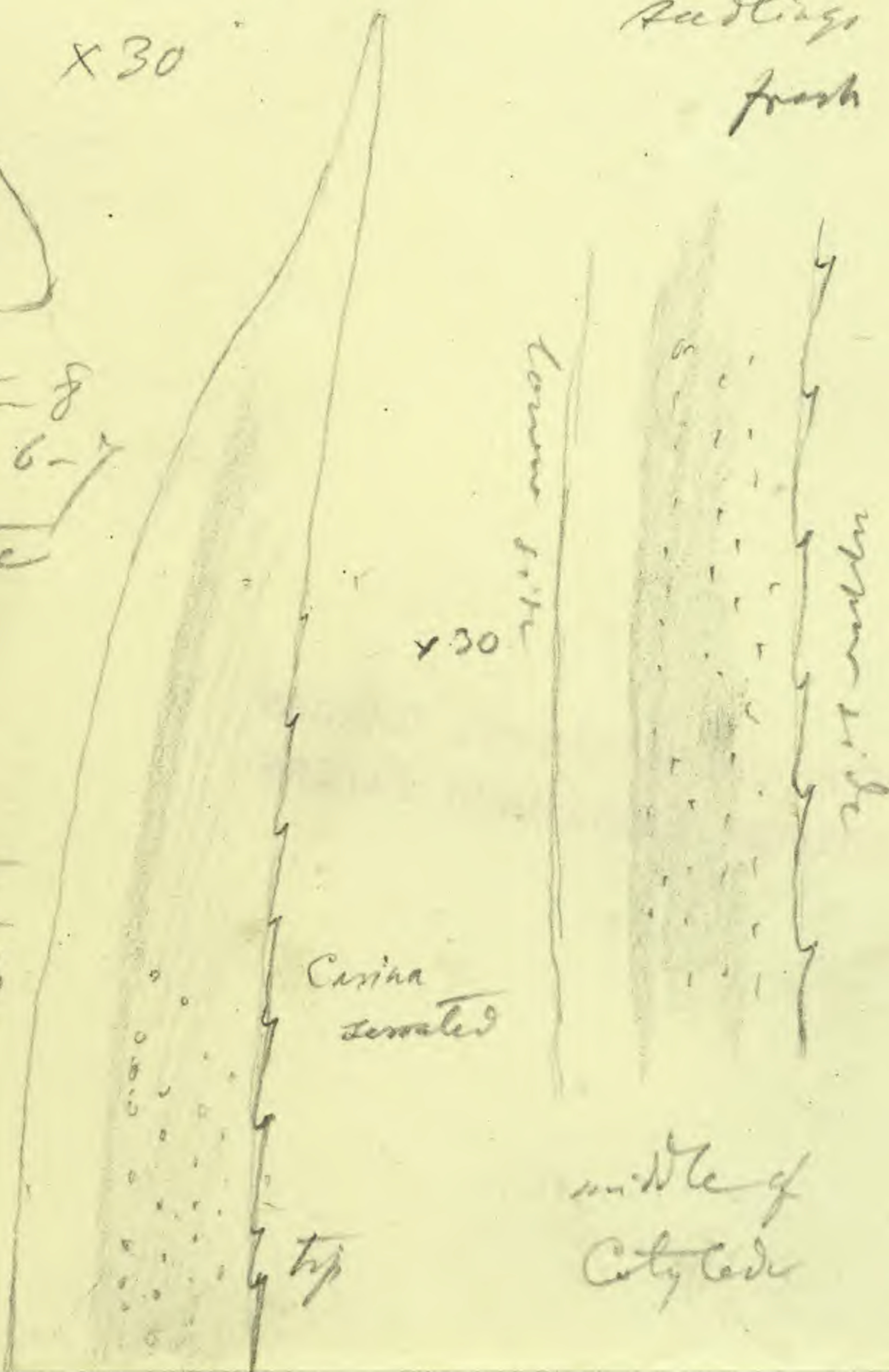
Seedlings raised by R. Douglas  
 Waukegan Ill



x 30

Leaves of Cotyledons 5-8  
 usually 6-7  
 set triangular carina serrate  
 flat below -

first young leaves flat  
 with scarcely any stomata  
 below, up dentate towards tip  
 others more square *back*  
 with more stomata below



Cotyledons with about  
 4 rows of stomata  
 on each side above  
 none on back

5 Cotyl	7 plant
6	25
7	8
8	3
	43



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*Meris Menziesii*

Exsiccata Sept 6 1876

4 years old

well developed leaves of young plantlets,  
usually acuminate on back,  
a little less so on upper carina  
and still less so on both sides.

X10

dorsal

ventral  
or  
upper



leaves laterally  
compressed

fragrant when bruised

dorsal carinae very prominent



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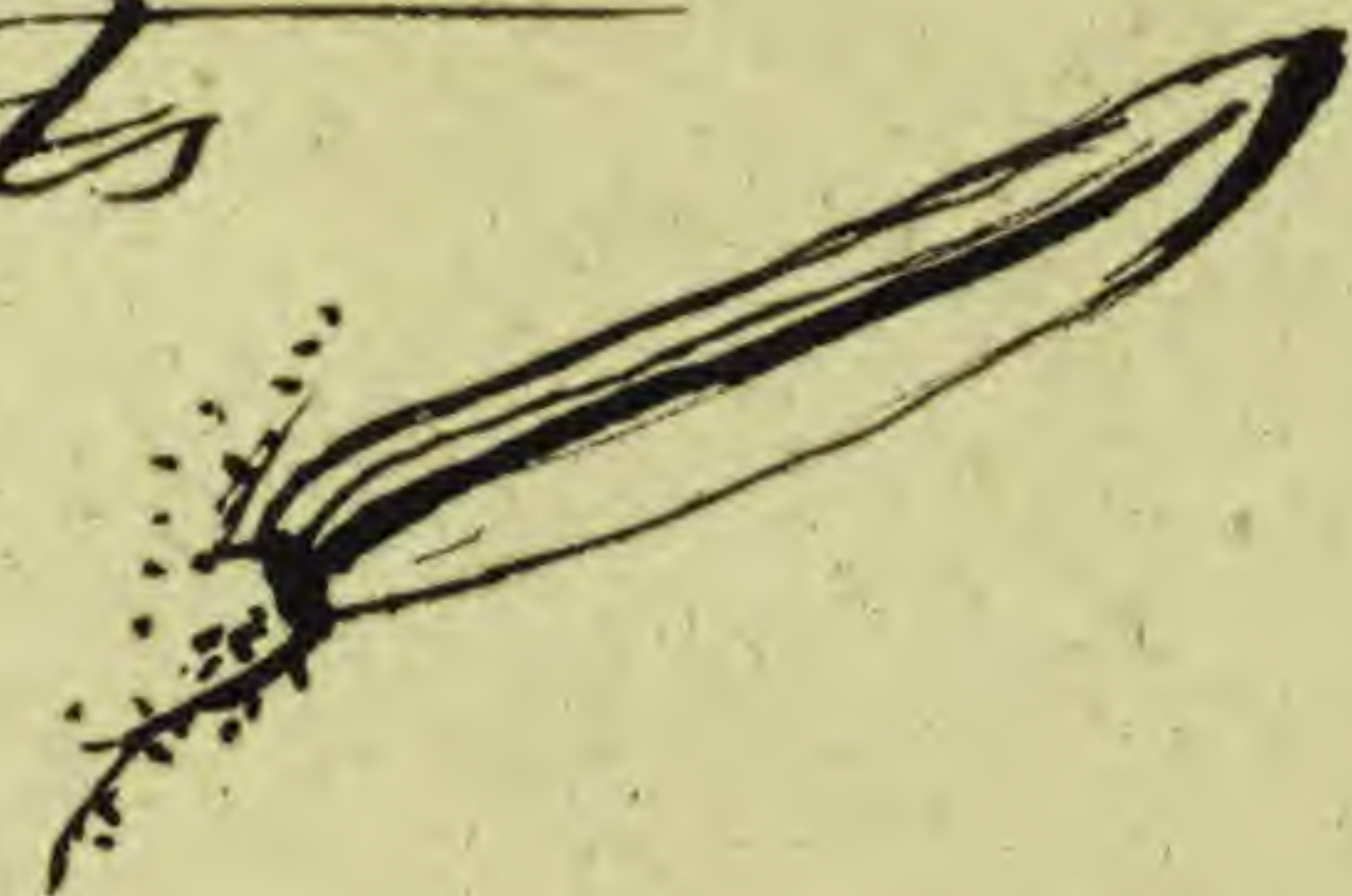


*Pinus Ajanensis* (dahurica Cat. Baik. is Larix)  
*Pinus Dahurica* Fisch. & R. Agnes — ~~at~~ Menziesii  
no fide Parlat — leaves short flat! from above,  
not laterally compressed. cones small, oval

*P. orientalis*, <sup>Lik</sup> 5-6 in, pubescent buds

leaves somewhat laterally  
compressed, very short

at base upper edge prominent  
& tip lower edge slanting



*Pinus Smithiana*, Himalaya, Hooker

a young specimen in this sheet with strongly  
sunken primary leaves is evidently a  
young *Pinus* and does not belong here.

Hb. reg. Berlin Jun 1869



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James Buchanan  
his Clerk - James  
his Secretary -

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The old. *Alfred* *John* *W. H.*  
 and *John* *W. H.* *John* *W. H.*  
 a *John* *W. H.* *John* *W. H.*  
*John* *W. H.* *John* *W. H.*



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